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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/557,151	04/25/2000	TSUTOMU YAMAZAKI	15162/01860	9300

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EXAMINER

DO, ANH HONG

ART UNIT PAPER NUMBER

2624

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/557,151

Applicant(s)
Yamazaki et al.

Examiner
Anh Hong Do

Art Unit
2624



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2+7 6) ☐ Other:

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (U.S. Patent No. 5,862,264).

Regarding claim 1, Ishikawa discloses:

- a region detector 14 for detecting an edge region in an image data GA (Fig. 1);
- a density conversion unit for reducing a density difference within the edge region (col. 9, lines 27-32);

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- a compression unit 16 for compressing the image data within the edge region where the density difference is reduced by said conversion unit, using an affine transformation (Fig. 1; and col. 9, lines 33-39);

- an expansion unit 22 for expanding the image data compressed by said compression unit 16 (Fig. 1).

Although Ishikawa does not specifically teach using discrete cosine transform, it is well-known in the art and can be used in a reversible image compression such as a reversible compression unit 16 in Ishikawa for suppressing a decrease in image quality of restored images (col. 1, line 66 - col. 2, line 1). Therefore it would have been obvious to employ a DCT in the reversible compression unit in Ishikawa in order to obtain a high image quality of restored images.

Regarding claim 6, since this claim is a method claim corresponding to apparatus claim 1, the discussion of claim applies hereto.

Regarding claim 11, Ishikawa discloses computer programs (col. 1, lines 19-20) to perform the steps in claim 6 and the discussion of claim 6 therefore applies hereto.

Regarding claims 2, 3, 7, 8, 12, and 13, Ishikawa teaches converting N-bit image data into (N-1)-bit image data and increasing density value of the converted (N-1)-bit image data a certain amount (see Figs. 4(A) and 4(B)).

Regarding claims 4, 9, and 14, Ishikawa teaches an image reader for reading a document and generating an image data to be processed (col. 5, lines 37-42).

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Regarding claims 5, 10, and 15, although Ishikawa does not specifically teach a printer for printing the expanded image data on a paper, the printer is well-known in the art and can be used in the form of a hardware such as one in Ishikawa for outputting the expanded image data (col. 5, lines 9-15), wherein the restored smoothed image data can be obtained (col. 5, lines 16-18). Therefore, it would have been obvious to use the printer as a hardware for outputting the expanded image data in Ishikawa in order to obtain the restored smoothed image.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Hong Do whose telephone number is (703) 308-6720.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700 or 4750. The fax phone number for this Group is (703) 872-9314.

December 2, 2002.

A handwritten signature in black ink, appearing to be "Anh Hong Do", written in a cursive style.